April 15, 1941. T. A. McCOY 2,238,178

CAN TAPPING TOOL

Filed July 30, 1937

Fig. 1.

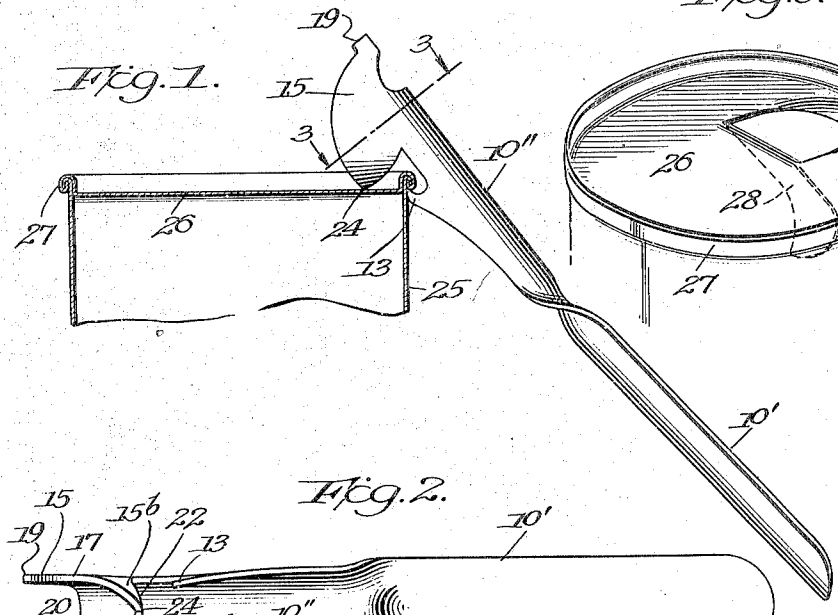


Fig. 6.

Fig. 2.

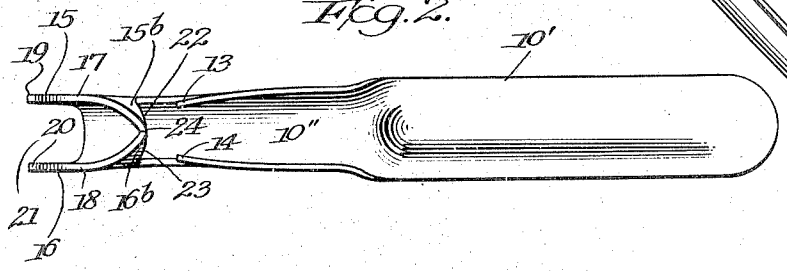


Fig. 3.

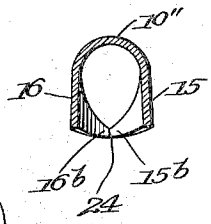


Fig. 5.

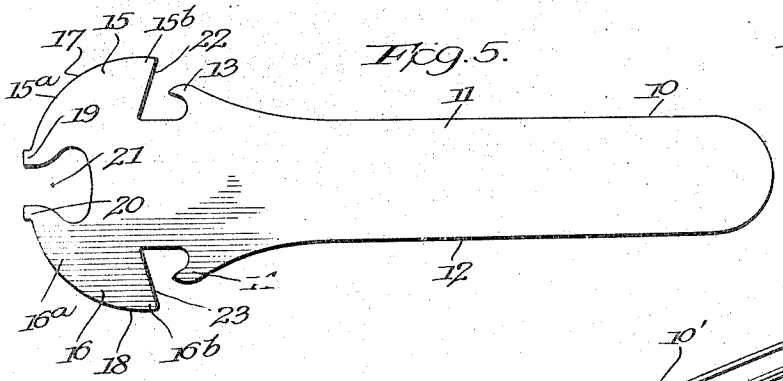
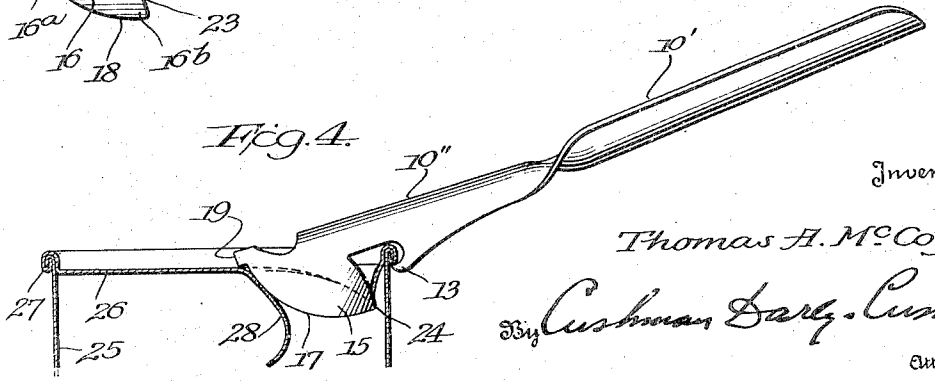


Fig. 4.



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2,238,178

CAN TAPPING TOOL

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Application July 30, 1937, Serial No. 156,569

12 Claims. (Cl. 30—16)

The present invention has as its purpose to provide a can puncturing tool in which dangerously sharp edges or points may be eliminated, and which may be conveniently and economically manufactured from sheet or relatively light plate material.

A practical embodiment of the invention is shown in the accompanying drawing, with reference to which the principles underlying the invention will be explained.

In the drawing:

Figure 1 shows the new tool in elevation and associated, as at the beginning of the tapping operation, with the upper portion of a can, the can being shown in axial section.

Figure 2 is a bottom view of the tool.

Figure 3 is a section substantially on line 3—3 of Figure 1.

Figure 4 is a view similar to that of Figure 1, the parts, however, being in the relation assumed at the end of the tapping operation.

Figure 5 is a plan view of a sheet metal blank from which the tool of the preceding figures is formed, and

Figure 6 is a view in perspective showing the can top with the opening as formed therein by the new tool.

Referring to the drawing, and first to Figure 5, reference numeral 10 designates a flat blank of sheet metal in generally the form of a strip of substantial thickness. As here shown, the blank has the substantially parallel side edges 11 and 12, which at the right of the figure merge into a rounded end, and at the left merge into hook-shaped opposite projections 13 and 14, whose points are directed toward the laterally projecting outwardly tapered opposite wings 15 and 16 at the left hand extremity of the blank. The wings 15 and 16 have the forward convexly curved edges 17 and 18, which terminate forwardly in forward projections or lugs 19 and 20, separated by a recess 21 formed on the longitudinal axis of the blank and symmetrical with respect thereto. The rearward edges 22 and 23 of the wings are rectilinear and reentrant or undercut.

The left hand end of the blank thus constituted is gradually bent on its longitudinal axis to produce a transversely rounded formation 10'' and to bring the proximal portions 15*a* and 16*a* of the wings into substantially parallel relation, Figures 2 and 3. Likewise the projections 13 and 14 are brought into substantially parallel relation. The distal portions 15*b* and 16*b* of the wings are now bent gradually inwardly and forwardly, so that the points existing between the edges 17 and 22 and 18 and 23 are brought substantially together to form a single rounded, hence blunt, puncturing point 24. It is not necessary that the points of the wings be brought into actual contact with each other but the contacting relation is preferable. For the purpose of forming a rigid handle portion 10', the righthand portion of the blank may be reversely bent on its longitudinal axis.

In Figures 1, 4 and 6, reference numeral 25 designates the side wall of the can, 26 the can top, and 27 a bead formed as the result of seaming the top to the body. As here shown, the bottom of the bead, which constitutes a fulcrum portion for engagement by the claws of the tapping tool, is about at the level of the outer surface of the can top. In order to tap the can, the projections 13 and 14, which constitute spaced apart claws, are engaged under the bead as shown in Figure 1, the seamed edge of the can being received in the recess existing between the claws and the loop-shaped puncturing and cutting head of which the wings are parts. The point as seen in profile in Figure 1, is directed squarely against the can top. That is to say, a line bisecting the angle of the point as seen in Figure 1 is about perpendicular to the can top, so that the head is most effectively disposed for the puncturing operation which occurs as the handle is raised. As soon as the point has punctured the top, the side faces of the head continue to expand the opening laterally and the forward edges 17 and 18 (specifically, the outer portions of those edges) exert a cutting action in a direction away from the side of the can, so that a tongue, shown at 28, Figures 4 and 6, is struck inwardly. Meanwhile, the rearward portion of the head forces inwardly and toward the side of the can the metal between the head and the bead, and this metal is substantially flattened out against the inner side of the can, ordinarily splitting, as at 29, Figure 6, so that the can is completely drainable when the tool is removed.

The entering movement of the head is limited by abutment of lugs 19 and 20 with the can top at the inner end of the opening, and at this time the point 24 is just out of contact with the side wall 25. In other words, the point 24 is spaced from the claws only sufficiently so that it will not engage and puncture the side wall during the formation of the top opening. In this manner the most powerful leverage possible is obtained.

The cutting edges of the head need no sharpening whatever and it is a feature of the invention that the original square edges of the blank are retainable throughout, since due to this, any

sharpening operation is dispensed with and the tool may be safely handled.

The invention is susceptible of varied embodiment, and since changes may be made in the form and relation of parts, I do not limit myself except as in the following claims.

I claim:

1. A can tapping tool comprising a handle, a puncturing and cutting head projecting transversely of the handle at one extremity of the latter, said head having side faces which are tapered and approached substantially to a point directed transversely of the handle, said faces having forward edges which are convexly curved from said point substantially to the plane of the handle, and which terminate in stop lugs substantially in the plane of the handle, and a claw on the handle adjacent the head and engageable under a fulcrum portion provided on a can.

2. A can tapping tool comprising a handle, a puncturing and cutting head projecting transversely of the handle at one extremity of the latter, said head having side faces which are tapered and approached substantially to a point directed transversely of the handle, said faces having forward edges which are convexly curved from said point substantially to the plane of the handle and having reentrant rearward edges, and a claw on the handle immediately adjacent said rearward edges and engageable under a fulcrum portion provided on a can.

3. A can tapping tool formed from a sheet of metal to provide a handle and a puncturing and cutting head projecting transversely of the handle at one extremity thereof, the head having side faces of tapered form bent to bring their extremities substantially together to provide a blunt puncturing point directed transversely of the handle, said faces having forward edges convexly curved from said point substantially to the plane of the handle, there being projections behind the head shaped to form claws engageable under a fulcrum portion provided on a can.

4. A can tapping tool formed from a sheet of metal to provide a handle and a puncturing and cutting head projecting transversely of the handle at one extremity thereof, the head having side faces of tapered form bent to bring their extremities substantially together to provide a blunt puncturing point directed transversely of the handle, said faces having forward edges convexly curved from said point substantially to the plane of the handle and having reentrant rearward edges, there being projections behind the head shaped to form claws engageable under a fulcrum portion provided on a can.

5. A can tapping tool formed from a sheet of metal to provide a handle and a puncturing and cutting head projecting transversely of the handle at one extremity thereof, the head having side faces of tapered form bent to bring their extremities substantially together to provide a blunt puncturing point directed transversely of the handle, the forward edges of said faces terminating in forwardly directed stop lugs, there being projections behind the head shaped to form claws engageable under a fulcrum portion provided on a can.

6. A can tapping tool formed from a blank of sheet metal, said blank being in the form of a strip with opposite laterally projecting wings at one extremity and with opposite hook-shaped projections adjacent said wings, said wings being tapered outwardly to points, the blank being bent on its longitudinal axis to bring the proximal portions of said wings into substantially parallel relation and to bring said projections into substantially parallel relation, the distal portions of said wings being bent toward each other to bring their points substantially together so as to form a single blunt puncturing point, said projections serving as claws engageable with a fulcrum portion provided on a can.

7. A can tapping tool formed from a blank of sheet metal, said blank being in the form of a strip with lateral oppositely projecting wings at one extremity and with opposite hook-shaped projections adjacent said wings, the forward edges of said wings being convexly curved and meeting the rear edges of the wings at points, the blank being bent on its longitudinal axis to bring the proximal portions of said wings into substantially parallel relation and to bring said projections into substantially parallel relation, the distal portions of said wings being bent toward each other to bring their points substantially together so as to form a single blunt puncturing point, said projections serving as claws engageable with a fulcrum portion provided on a can.

8. A can tapping tool formed from a blank of sheet metal, said blank being in the form of a strip with lateral oppositely projecting wings at one extremity and with opposite hook-shaped projections adjacent said wings, the forward edges of said wings being convexly curved and meeting the rear edges of the wings at points, said rear edges being reentrant, the blank being bent on its longitudinal axis to bring the proximal portions of said wings into substantially parallel relation and to bring said projections into substantially parallel relation, the distal portions of said wings being bent toward each other to bring their points substantially together so as to form a single blunt puncturing point, said projections serving as claws engageable with a fulcrum portion provided on a can.

9. A can tapping tool formed from a blank of sheet metal, said blank being in the form of a strip with lateral oppositely projecting wings at one extremity and with opposite hook-shaped projections adjacent said wings, the forward edges of said wings being convexly curved and meeting the rear edges of the wings at points, said rear edges being reentrant, the blank being bent on its longitudinal axis to bring the proximal portions of said wings into substantially parallel relation and to bring said projections into substantially parallel relation, the distal portions of said wings being bent toward each other to bring their points substantially together so as to form a single blunt puncturing poinf, said projections serving as claws engageable with a fulcrum portion provided on a can, said forward edges having extensions serving as stop lugs.

10. A can tapping tool formed from a blank of sheet metal of substantial thickness and comprising a handle, a loop-shaped head projecting transversely of the handle at one extremity of the latter and having tapering side faces with outer pointed extremities, and a claw rearwardly of the head and engageable with a fulcrum portion provided on a can, said extremities providing a blunt point closely adjacent said claw and said faces having blunt forward cutting edges.

11. A can tapping tool comprising a handle, a puncturing and cutting head at one extremity of said handle having tapering side faces directed transversely of the latter and approached to form a puncturing portion, and a claw on the

handle adjacent said puncturing portion adapted to engage under a fulcrum portion provided on a can, the main cutting portions at least of said head being constituted by the edges of said side faces which are remote from said handle, said edges being convexly curved longitudinally of the tool.

12. A can tapping tool comprising a handle, a puncturing and cutting head at one extremity of said handle having tapering side faces directed transversely of the latter and approached to form a puncturing portion, a claw on the handle adjacent said puncturing portion adapted to engage under a fulcrum portion provided on a can, the main cutting portions at least of said head being constituted by the edges of said side faces which are remote from said handle, and projecting means on the opposite side of said head from said handle for limiting the entering movement of the head.

THOMAS A. McCOY.